Predicting Ventricular Arrhythmia in Acute Myocardial Infarction from Surface ECG

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Introduction: Acute myocardial infarction is associated with ventricular arrhythmia and cardiac arrest. This study was to determining ECG parameter to predicting ventricular arrhythmia

Methods: The clinical data of patients who had been diagnosed with ST elevation myocardial infarction and Non-ST elevation myocardial infarction from 2017-2018 were retrospectively reviewed. All ECG parameter were obtained and analyzed using SPSS 20.0 for univariate, bivariate, multivariate and Receiver Operator Characteristic (ROC) analysis

Result: A total of 301 patients were included in this study. There were 97 patients occur ventricular arrhythmia during hospitalization. From univariate and bivariate, QT dispersion and TpTe were significantly prolonged among cases versus controls (P ≤ 0.05). Cut-off point was determine using ROC curve for QT dispersion (Cut-off > 23.5 ms; AUC 0.644; p< 0.001), QRS duration (Cut-off > 101.3 ms; AUC 0.667; p< 0.001) and TpTe (Cut-off > 122.2 ms; AUC 0.773; p<0.01). After multivariate analysis, three covariates were discovered to be significant with scoring 1 for each covariate: QTD > 23.5 ms, QRS duration > 101.3 ms, and TpTe > 122.2 ms. The score above 1 indicates high risk for emergence ventricular arrhythmia (AUC: 0.773; p<0.05; Sensitivity 60.9%; Specificity 80%)

Conclusion: ECG Parameter scoring of QTD, QRS duration, and TpTe is reliable, simple clinical prediction rule to indicate risk of ventricular arrhythmia. This CPR might help physician to more attention and prioritize to invasive reperfusion strategy.